stars given as closely following 31 *Leonis* is now missing. The places from that catalogue for 1855 are :

| | h | m | s | | ° | ′ |
|---|---|---|---|---|---|---|
| 31 *Leonis* | 10 | 0 | 10·3 | +10 | | 43·4 |
| (10°) 2117 (9·5) | 10 | 3 | 17·2 | | 10 | 37·3 |
| 2118 (9·5) | 10 | 3 | 25·2 | | 10 | 38·3 |
| 2119 (9·1) | 10 | 3 | 34·3 | | 10 | 43·3 |

Neither of the three small stars is given in the A.G. Catalogue, but the last is found in the Toulouse Catalogue, and also in Bonn No. 4. Only two of these stars are to be found now. One is 2119, and the other is probably 2118, although the difference in declination does not agree with the present position of the stars. The relation of 2119 and the other star is :

$$1903·22 \qquad P = 185°·7 \qquad D = 73''·70$$

One of these stars might have some proper motion, but it is more probable that the missing star and the apparent change in position are to be explained by errors in the DM.

The small nebula, *Dreyer* 3130, is in a low-power field with 31 *Leonis*. My direct measures from that star give :

$$1903·22 \qquad P = 106°·9 \qquad D = 296''·6$$

This gives substantially the same place as that in Dreyer's General Catalogue.

*The Yerkes Observatory :*
      *April 30.*

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## *New Companion to* Σ 1594. By S. W. Burnham.

The double star Σ 1594 was placed on the working list in order to make another set of measures for a determination of the proper motion shown in the prior observations. In observing the Σ companion with the 40-inch, a much nearer component was detected which has not been seen heretofore. This star was estimated $13^m·3$, and the mean result in position is :

$$1903·21 \qquad P = 318°·2 \qquad D = 1''·57 \qquad 3^n$$

The proper motion of A, assuming C to be fixed, I have deduced from the following measures :

| | | | | |
|---|---|---|---|---|
| 1831·93 | 165°·0 | 16″·95 | $2n$ | Σ |
| 1867·39 | 162·6 | 15·42 | $3n$ | Δ |
| 1879·26 | 160·4 | 15·22 | $1n$ | β |
| 1886·40 | 159·8 | 15·17 | $4n$ | Hl |
| 1903·19 | 158·1 | 14·46 | $4n$ | β |

These positions give for the most probable movement of the principal star 0″·043 in the direction of 200°·5. Struve's magnitudes of A and C are 8·7 and 10·5. The brighter is DM (42°) 2267, where it is called $9^{m}\cdot2$, and the place for 1880 from the A.G. Catalogue is :

$$\text{R.A. } 11^{h} 57^{m} 20^{s}$$
$$\text{Decl. } 42° 4' 25''$$

There is a more distant fourth star of about the same magnitude as the close component, which is not mentioned by Σ. The only measures are :

| | | | | |
|---|---|---|---|---|
| 1886·40 | 77°·3 | 25″·15 | $2n$ | Hl |
| 1903·20 | 76·0 | 25·02 | $3n$ | β |

Like C, it is probably only an optical companion, but the measures do not cover a sufficient time to make this apparent.

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   *April* 30.